

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A three-dimensional image forming method for forming a three-dimensional image having undulations with different heights corresponding to a three-dimensional object on a support using an ink jet system, comprising:

forming as a two-dimensional image a first layer image including said three-dimensional object on said support based on two-dimensional image information;

securing said first layer image on said support;

acquiring first height information with which said undulations with the different heights corresponding to said three-dimensional object are reproducible on said support;

forming a lamination image of said three-dimensional image having said undulations with the different heights corresponding to said three-dimensional object by laminating ink solid ejected using said ink jet system on said first layer image secured on said support based on said acquired first height information; and

fixing said lamination image of said three-dimensional image formed on said first layer image and having said undulations with the different heights corresponding to said three-dimensional object,

wherein said first height is acquired prior to starting said step of forming said lamination image of said ^{three} ~~three~~-dimensional image.

2. (original): The three-dimensional image forming method according to claim 1, wherein said first layer image is formed using an ink jet system that is the same as or different from said ink jet system used to form said lamination image of said three-dimensional image.

3. (original): The three-dimensional image forming method according to claim 1, wherein

said lamination image of said three-dimensional image is formed using an ink jet system that is capable of laminating said ink solid by ejecting ink containing a thermoplastic solid or ultraviolet cure ink, and

said first layer image is formed using an ink jet system that is capable of forming a two-dimensional image by ejecting water-based ink, oil-based ink or ultraviolet cure ink for image recording.

4. (original): The three-dimensional image forming method according to claim 1, wherein first fixation processing performed to secure said first layer image on said support and second fixation processing performed to fix said lamination image of said three-dimensional image formed on said first layer image are different from each other.

5. (currently amended): The three-dimensional image forming method according to claim 1, wherein said step of acquiring said first height information comprises the steps of:

acquiring second height information concerning a height or heights of said three-dimensional object from inputted three-dimensional object information; and

converting the acquired second height information into desired height information with which said undulations with the different heights corresponding to said three-dimensional object are reproducible on said support as said first height information.

6. (currently amended): The three-dimensional image forming method according to claim 5, wherein

said three-dimensional object information includes three-dimensional shape information concerning said three-dimensional object, and

said second height information is information concerning a height or heights in said three-dimensional shape information.

7. (original): The three-dimensional image forming method according to claim 5, wherein said two-dimensional image information is two-dimensional image data inputted in addition to said three-dimensional object information.

8. (original): The three-dimensional image forming method according to claim 5, wherein said two-dimensional image information and said three-dimensional object information are acquired from said inputted three-dimensional image information.

9. (currently amended): The three-dimensional image forming method according to claim 1, wherein

said two-dimensional image information is inputted information, and

said step of acquiring said first height information comprises the step of:

calculating as said first height information desired height information, with which said undulations with the different heights corresponding to said three-dimensional object and corresponding to at least one part of positions on said first layer image are reproducible on said support, from the inputted two-dimensional image information.

10. (currently amended): The three-dimensional image forming method according to claim 1, wherein

said two-dimensional image information is inputted information, and
said step of acquiring said first height information comprises the steps of:
calculating third height information corresponding to at least one part of positions on said first layer image from the inputted two-dimensional image information; and
converting the calculated third height information into desired height information with which said undulations with the different heights corresponding to said three-dimensional object are reproducible on said support as said first height information.

11. (currently amended): The three-dimensional image forming method according to claim 1, wherein said step of acquiring said first height information comprises the steps of:

acquiring second height information concerning a height of said three-dimensional object from inputted three-dimensional object information, and

converting the acquired second height information based on human's visual characteristics into desired height information with which said undulations with the different heights corresponding to said three-dimensional object are reproducible on said support.

12. (original): The three-dimensional image forming method according to claim 11, wherein

said three-dimensional object information includes three-dimensional shape information concerning said three-dimensional object, and

said second height information is information concerning a height in said three-dimensional shape information.

13. (original): The three-dimensional image forming method according to claim 11, wherein said two-dimensional image information is two-dimensional image data inputted in addition to said three-dimensional object information.

14. (original): The three-dimensional image forming method according to claim 11, wherein said two-dimensional image information and said three-dimensional object information are acquired from inputted three-dimensional image information.

15. (original): The three-dimensional image forming method according to claim 11, wherein said step of converting said second height information based on the human's visual characteristics comprises the step of:

determining a height frequency based on a grainy feeling or a glossy feeling, which is to be felt with human's sense of sight, obtained using samples having different surface roughness.

16. (original): The three-dimensional image forming method according to claim 11, wherein said step of converting said second height information based on the human's visual characteristics comprises the step of:

converting a height gradation in accordance with a height resolution visibility curve.

17. (original): The three-dimensional image forming method according to claim 16, wherein said step of converting said height gradation in accordance with said height resolution visibility curve is performed so that selective enhancement or suppression is performed in a region in which said human's sense of sight is enhanced.

18. (original): The three-dimensional image forming method according to claim 16, wherein said step of converting said height gradation in accordance with said height resolution visibility curve is performed so that information cut is performed in a region in which said human's sense of sight loses substantial sensitivity.

19. (currently amended): The three-dimensional image forming method according to claim 1,

wherein said two-dimensional image information is inputted information, and

said step of acquiring said first height information comprises the step of:

calculating desired height information, with which said undulations with the different heights corresponding to said three-dimensional object and corresponding to at least one part of positions on said first layer image are reproducible on said support, from said inputted two-dimensional image information based on human's visual characteristics.

20. (currently amended): The three-dimensional image forming method according to claim 1, wherein

said two-dimensional image information is inputted information, and said step of acquiring said first height information comprises the steps of:

calculating third height information corresponding to at least one part of positions on said first layer image from said inputted two-dimensional image information, and

converting the thus calculated third height information based on human's visual characteristics into desired height information with which said undulations with the different heights corresponding to said three-dimensional object are reproducible on said support.

21-30. (canceled).

31. (new): The method of claim 1, wherein acquiring the first height information takes into account a type of material for forming the three dimensional image.

32. (new): The method of claim 31, wherein the type of material taken into account are ink characteristics.

33. (new): The method of claim 31, wherein the type of material taken into account are color characteristics.